WE CLAIM:

1   1.   A method of coding partially-masked image data, comprising:

2   receiving original image data to be coded;

3   receiving a definition of a mask;

4   coding the image data, according to the step of:

5   generating wavelet coefficients representing the image

6   data to be coded, canceling coefficients of masked wavelets,

7   reconstructing image data based on the remaining wavelet

8   coefficients,

9   for the reconstructed image data that lies outside the

10   mask substituting the original image data therefor, the

11   resultant image data to be coded for a next iteration of

12   coding, if any; and

13   repeating the generating, canceling, reconstructing and

14   substituting steps until convergence is reached.

1   2.   The method of claim 1, wherein masked wavelets are those

2   having a substantial portion of their energy located below the

3   mask.

1   3.   A method of coding partially-masked image data, comprising:

2   receiving image data to be coded and a mask;

3   coding the image data as transform coefficients in a plurality

4   of stages, performed from finest scale to coarsest scale, wherein

5   each stage of coding comprises:

6   setting the resolution of the image data to the scale of

7   the instant stage,

8   generating transform coefficients representative of the

9   unmasked image data, the transform coefficients associated

10   with the scale of the instant stage,

11   identifying transform coefficients associated with image

12 data located below the mask,

13   canceling the identified transform coefficients,

14   reconstructing image data based on the remaining

15 coefficients,

16   for any portion of the reconstructed image data located

17 outside of the mask, substituting the corresponding original

18 image data therefor, and

19   repeating the generating, identifying, canceling and

20 reconstructing steps until the reconstructed image data

21 outside of the mask converges to the corresponding original

22 image data.

1   4.   The method of claim 3, wherein the transform coefficients are

2   wavelet coefficients obtained by wavelet coding.

1   5.   The method of claim 4, wherein the identified coefficients are

2   clipped wavelets, wavelets having a substantial portion of their

3   energy below the mask.

1   6.   The method of claim 3, wherein the setting step includes low

2   pass filtering the image data.

1   7.   A method of coding partially-masked image data, comprising:

2   receiving image data and a mask, and

3   iteratively, until convergence is reached:

4   coding the image data as transform coefficients,

5   identifying transform coefficients corresponding to image

6   data located under the mask,

1   for each identified coefficient w, modifying the

2   coefficient by a transform $w'=w(1-\gamma)$, where γ is an overshoot

3   factor having a value from 0 to 2,

4   reconstructing image data from the modified transform

5   coefficients and the unaltered transform coefficients,

6   for any portion of the reconstructed image data x'_i that

7   differs from a corresponding portion of the received image

8   data x_i, resetting the reconstructed image data to $x'_i=(1+\gamma)x_i$.

1   8. The method of claim 7, wherein the transform coefficients are

2   wavelet coefficients obtained by wavelet coding.

1   9. The method of claim 8, wherein the identified coefficients are

2   clipped wavelets, wavelets having a substantial portion of their

3   energy below the mask.

1   10. A coded data signal representing partially-masked image data,

2   the signal constructed according to the steps of:

3   receiving image data to be coded and a mask;

4   coding the image data according to the steps of:

5   generating wavelet coefficients of the image data,

6   canceling coefficients of masked wavelets,

7   reconstructing image data based on non-masked wavelets,

8   for any portion of the reconstructed image data that lies

9   outside of the mask, substituting the original image data

10   therefor, and

11   repeating the generating, canceling, reconstructing and

12   substituting steps until convergence is reached; and

13   outputting the coefficients of the non-masked wavelets as the

14   coded image data.

1 11. A coded data signal representing partially-masked image data
2 constructed according to the process of:
3   receiving original image data to be coded and a mask;
4   coding the image data as transform coefficients in a plurality
5 of stages, performed from a finest scale to a coarsest scale, the
6 coding for at least one stage comprising:
7   filtering the image data at a resolution corresponding to
8   the scale of the instant stage,
9   generating transform coefficients representative of the
10   filtered image data, the transform coefficients associated
11   with the scale of the instant stage,
12   identifying transform coefficients associated with image
13   data located below the mask,
14   canceling the identified transform coefficients,
15   reconstructing image data based on the remaining
16   coefficients,
17   for any portion of the reconstructed image data located
18   outside of the mask, substituting original image data
19   therefor, and
20   repeating the generating, identifying and canceling steps
21   until the reconstructed image data converges to the original
22   image data outside of the mask; and
23   outputting the unaltered transform coefficients from each
24 stage as the coded data signal.

1 12. The coded data signal of claim 11, wherein the transform
2 coefficients are wavelet coefficients obtained by wavelet coding.

1 13. A coded data signal representing partially-masked image data,
2 constructed according to the process of:
3   receiving image data to be coded and a mask;
4   initializing reconstructed image data to the received image
5 data; and
6   iteratively, until convergence is reached:
7   generating transform coefficients representative of the
8   reconstructed image data,
9   identifying transform coefficients associated with image
10   data below the mask,
11   for each identified transform coefficient w, modifying
12   the coefficient by $w'=w(1-\gamma)$, where γ is an overshoot factor
13   having a value from 0 to 2,
14   reconstructing image data from the modified transform
15   coefficients and the unaltered transform coefficients, and
16   for any portion of the reconstructed image data x'_i that
17   differs from a corresponding portion of the received image
18   data x_i, setting the reconstructed image data to $x'_i=(1+\gamma)x_i$,

1 14. The coded data signal of claim 13, wherein the transform
2 coefficients are wavelet coefficients obtained by wavelet coding.